

XTP PI 400

Four Port XTP Power Injector



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

Safety Instructions

Safety Instructions • English

WARNING: This symbol, ⚠, when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

ATTENTION: This symbol, ⚠, when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the Extron Safety and Regulatory Compliance Guide, part number 68-290-01, on the Extron website, www.extron.com.

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ATTENTION : Ce pictogramme, ⚠, lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec le matériel.

Pour en savoir plus sur les règles de sécurité, la conformité à la réglementation, la compatibilité EMI/EMF, l'accessibilité, et autres sujets connexes, lisez les informations de sécurité et de conformité Extron, réf. 68-290-01, sur le site Extron, www.extron.com.

Sicherheitsanweisungen • Deutsch

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VORSICHT: Dieses Symbol ⚠ auf dem Produkt soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

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注意: この記号 ⚠ が製品上に表示されている場合は、本機の取扱説明書に記載されている重要な操作と保守(整備)の指示についてユーザーの注意を喚起するものです。

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Korean

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안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트(www.extron.com)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference. This interference must be corrected at the expense of the user.

ATTENTION: The Twisted Pair Extension technology works with unshielded twisted pair (UTP) or shielded twisted pair (STP) cables; but, to ensure FCC Class A and CE compliance, STP cables and STP Connectors are required.

For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the “[Extron Safety and Regulatory Compliance Guide](#)” on the Extron website.

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Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

WARNING: A warning indicates a situation that has the potential to result in death or severe injury.

ATTENTION: Attention indicates a situation that may damage or destroy the product or associated equipment.

NOTE: A note draws attention to important information.

Specifications Availability

Product specifications are available on the Extron website, www.extron.com.

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Introduction

This guide contains information about the Extron XTP PI 400 Power Injector with instructions for experienced installers on how to install, configure, and operate the equipment.

In this guide, the term “XTP PI 400” is used to refer to the XTP PI 400 Power Injector.

This section provides basic information about this guide, the XTP PI 400, and key features of the XTP PI 400. Topics in this section include:

- [About the XTP PI 400](#)
- [Features](#)

About the XTP PI 400

The Extron XTP PI 400 is a four port power injector that provides power for up to four remote XTP transmitters or receivers, eliminating the need for local power supplies. Designed specifically for the high data rates of XTP systems, signal quality is unaffected when using the power injector. It can be installed anywhere within the XTP signal path, providing design flexibility for remote devices with limited space. To ensure quick and dependable installation, the 1U, half rack width enclosure can be securely mounted using Extron rack shelves. The XTP PI 400 power injector provides integration flexibility in XTP systems with fully populated matrix switchers.

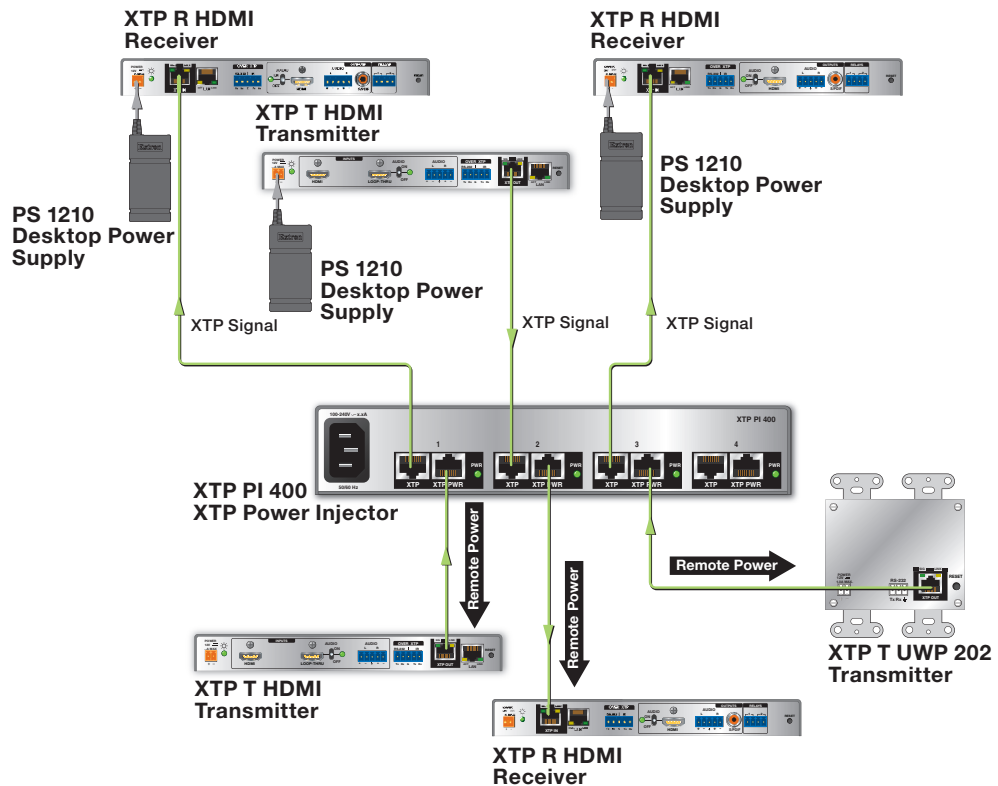


Figure 1. Typical XTP PI 400 Point-to-point Application

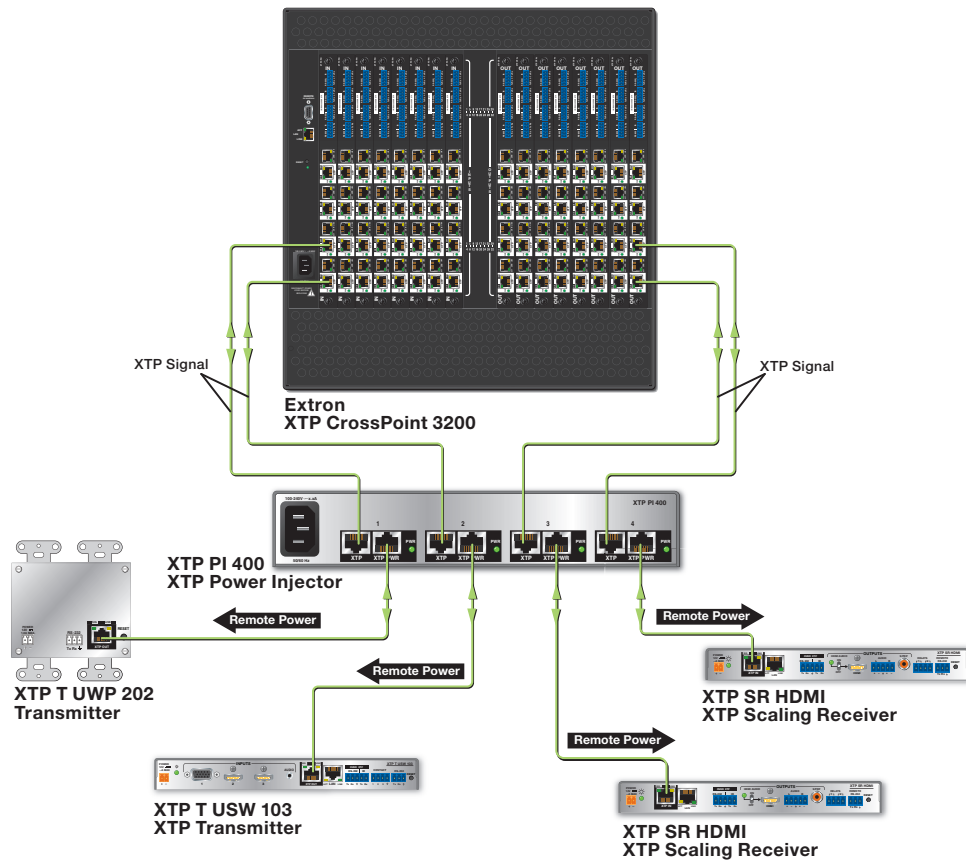


Figure 2. Typical XTP PI 400 Matrix Application

Features

- **Supplies power for up to four remote XTP extenders** — Provides power for up to four XTP transmitters or receivers over the XTP link, eliminating the need for local power supplies.
- **Designed specifically for the high data rates of XTP systems**
- **No impact on signal quality** — Utilization of the power injector does not affect video, audio, bidirectional RS-232 and IR, and Ethernet signal quality.
- **Real-time status LEDs for troubleshooting and monitoring** — Front and rear indicators provide status for each port that is supplying power to an XTP extender.
- **UL/c-UL Listed and CE compliant**
- **1U, half rack width enclosure**
- **Internal universal power supply** — The 100-240 VAC, 50-60 Hz, international power supply provides worldwide power compatibility.

Installation and Operation

This section contains installation procedures and operation features. Topics in this section include:

- **Installation**
- **LED Indicators**

Installation

Important Safety Instructions



This symbol, when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.



This symbol, when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product enclosure that may present a risk of electric shock.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments and accessories specified by the manufacturer.
- Unplug this device apparatus during lightning storms or when unused for long periods of time.

WARNING: Risk of electrical shock. To reduce the risk of fire or electric shock, do not expose this apparatus to rain, moisture, dripping, splashing, or objects filled with liquids.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

ATTENTION: This apparatus is a Class I product. This product must be connected to a mains socket outlet with a protective earthing connection.

The mains plug is used as the disconnect device and must remain readily operable.

WARNING: To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

ATTENTION:

- **Power sources** — This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature. Do not attempt to bypass or disable it.
- **Power disconnection** — To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Rear Panel Connectors

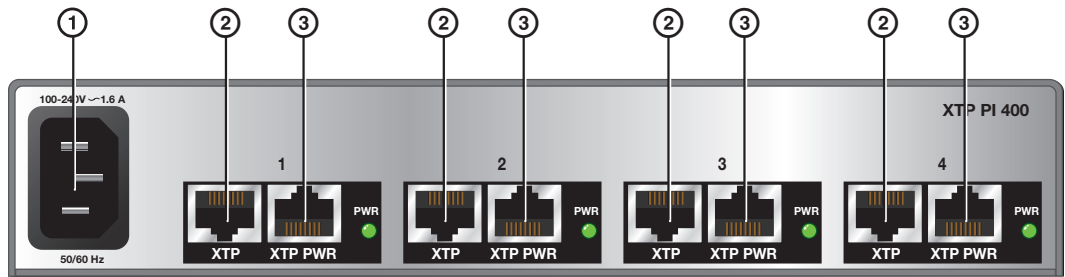


Figure 3. Rear Panel Features

ATTENTION: Do not connect these devices to a computer data or telecommunications network.

NOTE: The XTP PI 400 does not switch XTP signals.

- ① **AC power connector** — Connect the IEC power cord to the AC power connector.
- ② **XTP connector** — Connect an Extron XTP device that is powered by a local power source to the XTP connector on any of the four port pairs.
- ③ **XTP PWR connector** — Connect an Extron XTP device that requires power from an external source to the XTP PWR connector. Make sure there is an XTP device plugged into the XTP connector on the same port pair.

NOTE: Do not loop XTP port pairs on a single cable run to remotely power the transmitter and receiver. Figure 5, below, shows this type of application, which is **not** recommended by Extron.

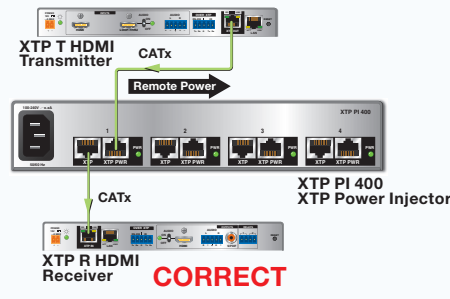


Figure 4. Correct application

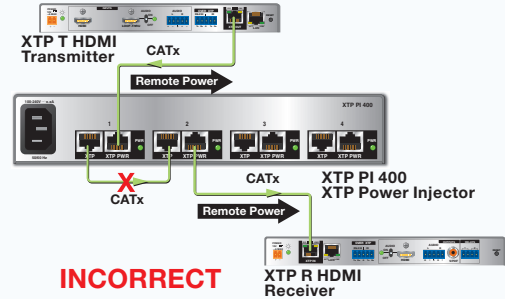
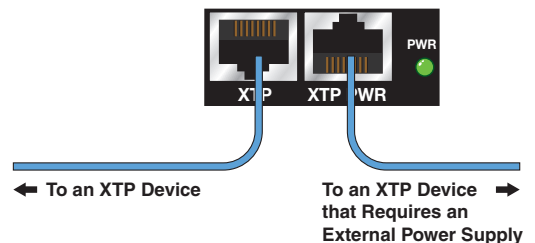


Figure 5. Incorrect application

Installation Overview

1. Mount the device in a rack, under a table, or on a tabletop (see [Mounting](#) on page 8).
2. Connect a locally powered XTP device to the XTP connector on one of the port pairs.
3. On the same port pair, connect an XTP device that requires power from an external source to the XTP PWR connector.
4. Repeat steps 2 and 3 for each XTP port pair as necessary.
5. Connect AC power to the XTP PI 400.



Twisted Pair Cable Recommendations

Use the following pin configurations for twisted pair cables.

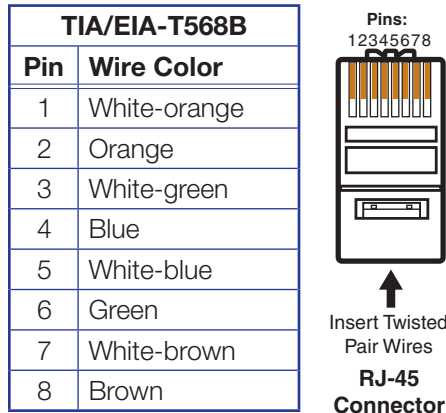


Figure 6. Twisted Pair Cable Configuration

Supported cables

The XTP PI 400 is compatible with CAT 5e, 6, 6a, and 7 shielded twisted pair (F/UTP, SF/UTP, and S/FTP) and unshielded twisted pair (U/UTP) cable.

ATTENTION:

- Do not use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable.
- To ensure FCC Class A and CE compliance, STP cables and STP connectors are required.

Cable recommendations

Extron recommends using the following practices to achieve full transmission distances up to 330 feet (100 m) and reduce transmission errors:

- Use the following Extron XTP DTP 24 SF/UTP cables and connectors for the best performance:
 - **XTP DTP 24/1000** Non-plenum 1000 feet (305 m) spool 22-236-03
 - **XTP DTP 24P/1000** Plenum 1000 feet (305 m) spool 22-235-03
 - **XTP DTP 24 Plug** Package of 10 101-005-02
- If you are not using XTP DTP 24 cable, at a minimum Extron recommends 24 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.
- Terminate cables with shielded connectors to the TIA/EIA-T568B standard.
- Limit the use of more than two pass-through points, which may include patch points, punch down connectors, couplers, and power injectors. If these pass-through points are required, use CAT 6 or 6a shielded couplers and punch down connectors.

NOTE: Using more than three patches with the XTP PI 400 yields varying maximum cable lengths.

Number of Patches	Maximum Transmission Distance
1 or 2	330 ft (100 m)
3	280 ft (85 m)

NOTES: When using CAT 5e or CAT 6 cable in bundles or conduits:

- Do not exceed 40% fill capacity in conduits.
- Do not comb the cable for the first 20 m where cables are straightened, aligned, and secured in tight bundles.
- Loosely place cables and limit the use of tie wraps or hook-and-loop fasteners.
- Separate twisted pair cables from AC power cables.

LED Indicators

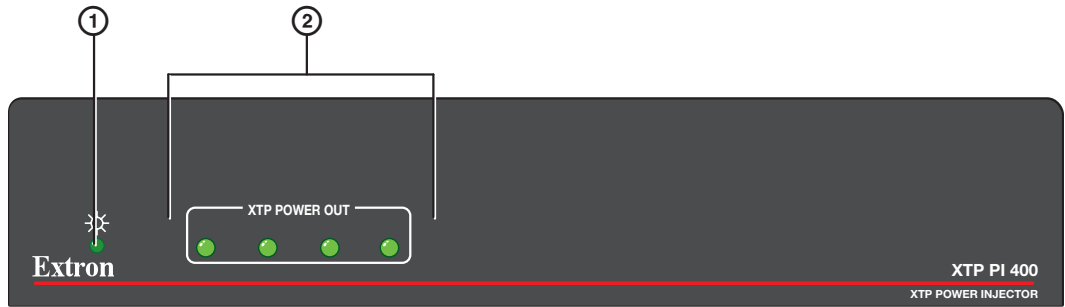


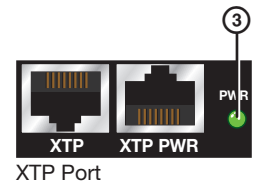
Figure 7. Front Panel Features

- ① **Front panel power LED indicator** — Lights to indicate the XTP PI 400 is receiving power.
- ② **Front panel XTP Power Out LED indicators** — Light when the XTP PI 400 is providing power to XTP devices connected to the XTP PWR connectors.

NOTE: If the last connected XTP device that requires power draws more power than the XTP PI 400 can provide, the corresponding XTP Power Out LED indicator blinks, indicating the output cannot be powered due to the over power draw. Disconnect the XTP device to correct the issue.

- ③ **Rear panel Pwr LED indicators** — Light or blink to indicate the various power states of the XTP device connected to the corresponding XTP PWR connector (see the table below for LED states).

LED State	Port Status
Unlit	The endpoint is not connected or cannot be powered.
Lit	The endpoint is receiving power from the XTP PI 400.
Blinks five times	There is a power overload fault.
Blinks nine times	The power allocation is exceeded.



Reference Information

Mounting

The XTP PI 400 is 1U high and one half rack wide.

ATTENTION:

- The XTP PI 400 is not suitable for use in air handling spaces or in wall cavities. The power supply must be located within the vicinity of the Extron AV equipment in an ordinary location with pollution degree 2, and secured to an equipment rack within a dedicated closet, podium, or desk.

The installation must be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 75 and Canadian Electrical Code part 1, section 16. The power supply must not be permanently fixed to building or similar structure.

- This device is for intra-building use only.

1. Turn off or disconnect all equipment power sources.
2. Mount the XTP PI 400 on a table, on a rack shelf, or under a desk using an optional mounting kit.

WARNING: Risk of electrical shock. To reduce the risk of fire or electric shock, do not expose this apparatus to rain, moisture, dripping, splashing, or objects filled with liquids.

Tabletop Mounting

Attach the provided rubber feet to the bottom four corners of the enclosure.

Under-the-table Mounting

Use an optional Extron mounting kit to mount the XTP PI 400 under a desk or table. Follow the instructions included with the kit.

Rack Mounting

Mount the XTP PI 400 to an optional Extron rack shelf. To mount the unit on a rack shelf, follow the instructions provided with the shelf accessories.

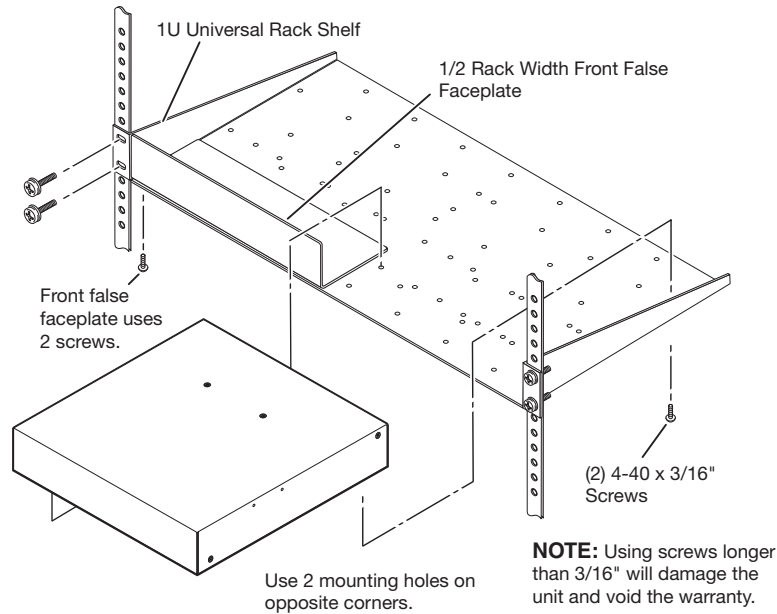


Figure 8. Half Rack Mounting

UL Guidelines for Rack Mounted Devices

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the XTP PI 400 in a rack.

- 1. Elevated operating ambient temperature** — If the equipment is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the XTP PI 400 in an environment compatible with the maximum ambient temperature ($T_{ma} = +122\text{ }^{\circ}\text{F}$, $+50\text{ }^{\circ}\text{C}$) specified by Extron.
- 2. Reduced air flow** — Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
- 3. Mechanical loading** — Mount the equipment in the rack so that uneven mechanical loading does not cause a hazardous condition.
- 4. Circuit overloading** — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- 5. Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

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Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Japan:

Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe and Africa:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

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686 Ronghua Road
Songjiang District
Shanghai 201611
China

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Extron Asia Pte Ltd
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PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:

Extron Middle East
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F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876
Asia: 65.6383.4400

Europe: 31.33.453.4040
Japan: 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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